

eRHIC Panel

Comment on Planning Process

- Two Phases:
 - White Papers and Town Meetings organized by DNP
 - Planning meeting organized by NSAC, closely watched by agencies
- Budgetary guidance will greatly influence discussion

Quote from the 2007 Plan

The four recommendations in this Plan can be accommodated under a funding profile consistent with doubling the DOE ONP budget in actual year dollars over the next decade together with NSF funding for DUSEL, including some of the equipment for experiments to be carried out in DUSEL. The ONP budget assumed here is consistent with the request made in January 2006 to double the DOE Office of Science budget.

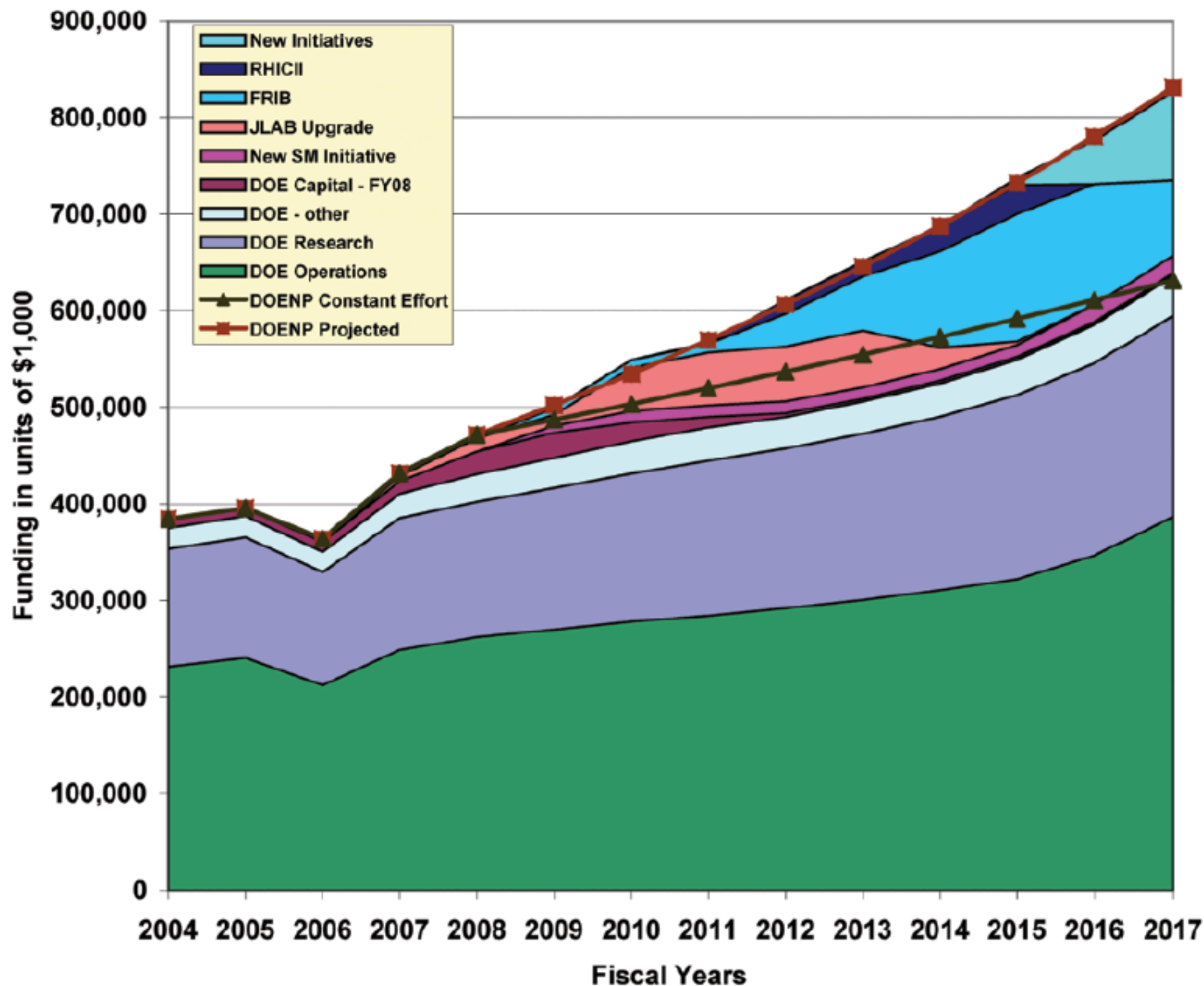


Figure 7.5: DOE budget projections (in as-spent dollars). The line that connects the triangles represents a constant effort budget.

Quote from 1996 Plan

NSAC received from the agencies explicit budgetary guidance for this Long Range Plan. For the Department of Energy, our Plan corresponds to a FY 1997 budget between \$325M and \$350M and then goes forward at a constant level of effort (interpreted as constant spending power). The high end of the charge corresponds to the FY 1995 budget adjusted for inflation; the low end corresponds to a 7% reduction from the FY95 budget, adjusted for inflation.

Questions

- *What is the optimal trajectory for RHIC? What are critical decisions and branch points?*
 - *Obtain approval for RHIC III/eRHIC: NSAC Endorsement, CD-0, 1, 2, etc..*
 - *Complete as much of RHIC II program as funding allows until RHIC has to be closed for installation of new hardware.*
 - *Install and Run RHIC III*
 - *Critical decision and branch point is siting:*
 - *Critical factor will be cost*

Thoughts on siting process

- 2007 Plan advocates a unified QCD Facility
- Unlikely that White Paper/Town Meeting Process will resolve eRHIC/ELIC choice for EIC
 - From RHIC perspective choice cannot be delayed
 - JLAB is busy and probably won't be ready
 - Have to have a united front at the planning meeting
- How do we keep things moving?

Dark Energy Mission Need

Dr. Brinkman approved Critical Decision 0 (Mission Need) for a new, next-generation, state-of-the-art Stage IV ground-based dark energy experiment (DE-IV) on June 20, 2011.

Potential Approaches:

DOE/HEP will partner with NSF-Astronomy to build a new or enhance an existing ground-based telescope that is well optimized to make stage-IV dark energy measurements.

- **Option 1:** Develop the first Astro2010 priority, the LSST, which would include building a new telescope facility with associated instrumentation.
- **Option 2:** Bring new instrumentation and expanded capabilities to an existing ground-based telescope for studying dark energy, as part of the second Astro2010 priority.
- **Option 3:** Participate in both options.
- **Option 4:** Do nothing.

Questions

- *Since LHC HI results seem very similar to RHIC's, are both facilities needed?*
 - ***RHIC has unique features which should be exploited: e.g Low Energy Scan, Spin.***
 - ***Heavy Ion program must be completed, needs upgrades***
 - ***Complementarity to LHC is good; so is motherhood. It may be difficult to maintain operations through the decade based on complementarity alone.***
 - ***RHIC HI Program may have to face a science review to assess program in LHC era***

Questions

- *Will 2-3 year cessation of RHIC operations be essential to fund eRHIC? If so, what is optimal timing?*
 - ***This might have been an option for meRHIC. Under present plan, savings would probably be marginal.***
 - ***A substantial interruption of RHIC operations is inevitable for installation of the new hardware.***
- *Is it crucial to maintain AA & pp capability into eRHIC era? If so, can we reconfigure IR's annually, or do we separate HI from eA in different IR's?*
 - **I don't believe that it is crucial to maintain AA capability.**
 - **I don't believe it is a good idea to propose to continue the HI program in parallel.**
 - **There may be a case to continue p-A or d-A**

Questions

- *What eRHIC science is realizable within a reasonable total project cost limit?*
 - *My knowledge of the costs of the latest iteration of the machine cost is insufficient to answer this;*
 - *I am impressed at the progress made in the past year*
- *How do STAR and PHENIX Collaborations evolve smoothly from RHIC to eRHIC?*
 - *I doubt that they will, or that they should*
 - *RHIC III would represent an additional commitment of around \$3B from DOE over a ten year period.*
 - *I don't believe that such an investment would be cost effective without at least one new, dedicated, detector.*
 - *I would strongly favor that this be a new collaboration. We will need the best from both collaborations and from other branches of the field.*